

CLAIMS

We claim:

1. An elevator system, comprising:
a hoistway;
5 a cab disposed for movement within the hoistway;
a plurality of cab-supported sheaves moving with the cab through the
hoistway;
a first hoistway sheave that is located near a first end of the hoistway;
a second hoistway sheave that is located near a second end of the hoistway;
10 a load bearing member, which (i) extends from near the first end of the
hoistway toward the cab, where the load bearing member is redirected by one of the
plurality of cab-supported sheaves toward the first end of the hoistway, (ii) at least
partially wraps around each of the first hoistway sheave and the second hoistway
sheave, and (iii) extends from near the second end of the hoistway toward the cab,
15 where the load bearing member is redirected by another of the plurality of cab-
supported sheaves toward the second end of the hoistway; and
a tension device that maintains tension in the load bearing member.
2. The system according to claim 1, wherein the load bearing member is roped in
20 a roping ratio of greater than 2:1.
3. The system according to claim 1, wherein more than one of the plurality of
cab-supported sheaves redirect the load bearing member toward the first end of the
hoistway.
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4. The system according to claim 1, wherein there are a plurality of the second
hoistway sheaves, each of which redirects the load bearing member toward the first
end of the hoistway.
- 30 5. The system according to claim 1, wherein an end of the tension member is
secured to the tension device.

6. The system according to claim 1, wherein the first end is a top of the hoistway, and the second end is a bottom of the hoistway, so that:

the load bearing member extends from near the top of the hoistway toward the cab,

5 then the load bearing member wraps at least partially around the one of the plurality of cab-supported sheaves and extends back toward the top of the hoistway,

then the load bearing member wraps at least partially around the first hoistway sheave and extends down toward the bottom of the hoistway,

10 then the load bearing member wraps at least partially around the second hoistway sheave and extends toward the cab, and

then the load bearing member wraps at least partially around the other of the plurality of cab-supported sheaves and extends back toward the bottom of the hoistway.

7. A method of roping an elevator system that includes a cab disposed in a hoistway, comprising:

providing a plurality of cab-supported sheaves;

providing a first hoistway sheave located near a first end of the hoistway;

5 providing a second hoistway sheave located near a second end of the hoistway;

extending a load bearing member from near the first end of the hoistway toward the cab, where the load bearing member is redirected by one of the plurality of cab-supported sheaves toward the first end of the hoistway;

10 at least partially wrapping the load bearing member around each of the first hoistway sheave and the second hoistway sheave;

extending the load bearing member from near the second end of the hoistway toward the cab, where the load bearing member is redirected by another of the plurality of cab-supported sheaves toward the second end of the hoistway; and

15 providing a tension device to maintain tension in the load bearing member.

8. The method according to claim 7, further comprising redirecting the load bearing member toward the first end of the hoistway by at least one more of the plurality of cab-supported sheaves.

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9. The method according to claim 7, further comprising:

providing at least one more hoistway sheave located near the second end of the hoistway; and

25 at least partially wrapping the load bearing member around the at least one more hoistway sheave.

10. The method according to claim 7, further comprising securing an end of the tension member to the tension device.